In the Claims:

--38.(New) The use of a buoyancy fluid presenting density that is less than that of sea water, and that is confined in a rigid or flexible leaktight casing, so as to constitute an immersed buoyancy element, wherein said buoyancy fluid is a compound that is naturally in the gaseous state at ambient atmospheric temperature and pressure, and in the liquid state at the underwater depth to which said buoyancy element is immersed.

39.(New) A use according to claim 38, wherein said buoyancy fluid is naturally in the stable liquid state when it is placed at an underwater depth of 10 m to 500 m, and preferably of 20 m to 100 m.

40.(New) A use according to claim 38, wherein said buoyancy fluid is a fluid that is quasi-incompressible, and that presents a relative density in the liquid state of 0.3 to 0.8, and preferably of 0.5 to 0.7.

41.(New) A use according to claim 38, wherein said gas is selected from ammonia, a C-2 to C-7 alkane, a C-2 to C-7 alkene, a C-2 to C-7 alkyne, and a C-4 to C-7 diene.

42. (New) A use according to claim 41, wherein said compound is selected from the list: ammonia, ethane, butane, propane, ethylene, propylene, butene, acetylene, methyl acetylene, propadiene, and butadiene.

43. (New) A use according to claim 42, wherein said compound is selected from ammonia, propane, and butane.

44. (New) A use according to claim 38, wherein said casing is constituted by, or is placed inside, the walls of a compartment of an immersed structure.

45. (New) A use according to claim 38, wherein said casing is placed outside an immersed structure to which it is connected or secured.

46. (New) A use according to claim 45, wherein said immersed structure is suspended from said buoyancy element by at least one cable.

47. (New) A immersed buoyancy element imparting buoyancy to an immersed structure to which it is connected or secured, or in which it is integrated, said buoyancy element comprising a said immersed casing in which said liquefied compound is confined in leaktight manner in accordance with the use of claim 38.

48. (New) A buoyancy element according to claim 47, comprising a flexible casing, preferably having a hydrodynamic profile, minimizing forces during its vertical movements when it is full of said buoyancy fluid as defined in claim 38.

49. (New) A method of putting a buoyancy element according to claim 47 into place between the surface and the bed of the sea, wherein said fluid is stored in a tank on a surface ship as a liquid in the cooled or compressed state, and it is injected in the liquid state into a pipe from the surface where it is stored to a said immersed casing at an underwater depth at which the underwater pressure is not less than the vapor pressure of the gas corresponding to said compound at the ambient temperature at said depth.

50. (New) A method according to claim 49, wherein said casing is a flexible casing that is lowered to the desired depth empty, in a folded state.

51. (New) A method according to claim 49, wherein said casing is prefilled, at atmospheric pressure and temperature, with sea water or with another fluid, preferably an incompressible liquid compound such as gas oil, fresh water, or methanol, and the sea water or said other liquid is discharged from the casing as it fills with said buoyancy fluid as defined in claim 38.

52. (New) A method according to claim 51, wherein said casing is prefilled with sea water, and before it is filled with a said buoyancy fluid, a limited quantity of methanol is injected, since methanol is suitable for preventing the formation of hydrates.

53. (New) A method according to claim 51, wherein said casing is filled at the surface with a said other fluid, and said casing filled in this way is lowered to a depth at which the hydrostatic

pressure corresponds to the pressure at which said buoyancy fluid is subsequently injected into said casing with said other fluid being discharged.

54. (New) A method according to claim 49, wherein said buoyancy fluid is stored as a liquid in the cooled state in a cryogenic tank and at atmospheric pressure, and it is injected in the pressurized liquid state into said immersed casing at a pressure corresponding to the hydrostatic pressure at the depth of said casing, said buoyancy fluid passing through a heat exchanger so that the temperature of said fluid is brought substantially to that of the sea water at the depth of said immersed casing prior to filling said casing.

55. (New) A device for stabilizing or controlling the lowering or raising of a structure between the surface and the bed of the sea, said structure including or being connected to a buoyancy element according to claim 47, said device including at least one connection element of the cable or chain type, having:

a first end that is connected to a winch on board a floating support or ship on the surface, and on which winch it is wound; and

a second end that is connected to a fastener element on said structure, or on at least a first buoyancy element according to claim 47 that is connected to said structure; and

the length of said connection element is such that said winch is capable of winding or unwinding said first end of said connection element, so that a bottom portion of said connection element can hang beneath said fastener element.

56. (New) A device according to claim 55, including at least two of said connection elements, said fastener elements preferably being disposed symmetrically, respectively around and on the periphery of said structure.

57. (New) A device according to claim 55, wherein said connection element is constituted by a cable having a bottom portion that comprises weighting blocks disposed in a string on a said cable, said weighting blocks preferably being metal blocks secured to said cable by clamping.

58. (New) A device according to claim 57, wherein said blocks present a shape such that when said bottom portion hanging beneath said fastener elements curves, two of said blocks disposed side by side are capable of coming into abutment against each other, thereby limiting the curvature of said cable.

59. (New) A device according to claim 58, wherein the curvature of said cable is limited so that the minimum radius of curvature of said cables at said bottom portion enables a minimum distance to be maintained between said cable and said structure that is sufficient to prevent any mechanical contact between them while said structure is being lowered or raised.

60. (New) A device according to claim 57, wherein each of said blocks present a cylindrical central portion between two frustoconical ends having axes that correspond to the direction of said cable when said cable is disposed linearly, two adjacent blocks being in contact at said

frustoconical ends along a generator line of said frustoconical ends in the curved parts of said bottom portion.

61. (New) A device according to claim 55, wherein said connection element comprises a chain having a bottom portion that comprises links that are heavier than the links of the rest of the chain, and that are preferably larger so as to limit any curvature of the chain.

62. (New) A device according to claim 55, wherein said first buoyancy elements are disposed above said structure.

63. (New) A device according to claim 55, wherein said structure includes second buoyancy elements, preferably according to claim 47, that are integrated in said structure, and more preferably integrated above said fastener element(s) so that the center of gravity of said structure together with said first buoyancy elements according to claim 47 is situated below the center of thrust that is exerted both on said structure and on said first buoyancy elements according to claim 47.

64. (New) A method of lowering, raising, or stabilizing a structure between the surface and the bed of the sea by means of a device according to claim 55, said method comprising the following steps: unwinding or winding each connection element at its first end by means of a said winch; and controlling the speed at which each connection element is lowered or raised by regulating the speed at which each connection element is respectively wound off or on said winch, so as to

adjust the length of said bottom portion of said connection element hanging beneath said fastener element, the lowering, raising, or stabilizing of said structure being obtained when the sum of the weight of the fraction of said bottom portion(s) of the connection element(s) between firstly said fastener point(s) for fastening to said fastener element(s) and secondly the lowest point of said bottom portion(s), plus the weight of said structure as a whole and of said first buoyancy element(s) according to claim 47, is respectively greater than, less than, or equal to the buoyancy thrust that is exerted on said structure and on said first buoyancy element(s) according to claim 47.

65. (New) A method according to claim 64, wherein said structure is a rigid structure of steel, other metal, or composite synthetic material containing at least one and preferably a plurality of leaktight buoyancy compartments that are suitable for forming a said buoyancy element according to claim 47, with each of said compartments being fitted with at least one filling orifice and preferably with at least one emptying orifice, said leaktight compartments preferably being distributed symmetrically in said structure.

66. (New) A method according to claim 64, wherein said structure is a massive structure constituted by an open-based receptacle in the form of a cap, the receptacle comprising a peripheral side wall surmounted by a roof wall and being suitable for completely covering a wreck of a ship on the sea bed in order to recover polluting effluent escaping therefrom, said receptacle having at least one emptying orifice for discharging said effluent contained in the

inside volume of said receptacle; said emptying orifice preferably being situated in the roof of the receptacle.

67. (New) A method according to claim 65, wherein said receptacle is constituted as an upside-down double-walled ship hull, said leaktight compartments being defined by spaces between said double walls and by structural elements interconnecting the double walls.

68. (New) A method according to claim 64, wherein the rigid structure includes hollow tubular bars defining leaktight compartments and forming said buoyancy elements according to claim 47.

69. (New) A method according to claim 64, wherein said structure is fitted on the outside:

with fastener elements enabling said buoyancy elements and said cables or said chains to be secured thereto for lowering said structure from the surface, and for putting it into place, and, where appropriate, anchoring it to the sea bed; and

preferably with thrusters, more preferably steerable thrusters enabling said structure to be moved in a horizontal direction in order to position it.

70. (New) A method according to claim 64, comprising the following steps:

1) filling said leaktight compartments completely or partially with a said buoyancy fluid, so as to constitute a buoyancy element according to claim 47, with the extent to which said

leaktight compartments are filled being adjusted so as to cause said structure to occupy an equilibrium position when immersed close to the surface;

2) lowering said structure to the desired position by means of a device according to claim 53 for controlling lowering, so as to regulate the speed at which the receptacle is lowered, and so as to provide equilibrium to the base of said substantially horizontal structure while it is being lowered; and

3) once said structure is immersed to the desired depth, emptying said leaktight compartments filled with fluid lighter than sea water that is recovered at the surface, and simultaneously filling said leaktight compartments with sea water.

71. (New) A method according to claim 70, wherein,

in step 1), additional buoyancy is provided to said structure by means of said first buoyancy elements consisting of additional floats connected to said receptacle; and

in step 3), once said structure is in the underwater position at the desired depth, said additional floats are detached.

72. (New) A method according to claim 70, wherein, after step 1) and before step 2), once said structure has reached the desired position, in particular in the vicinity of the sea bed, the lengths of said heavy stabilizing cables (or chains) hanging beneath said fastening elements are reduced so as to stabilize said structure in suspension, and

where appropriate, said structure is anchored to the sea bed, and then

said heavy stabilizing cables (or chains) are fully lowered so that their entire weight contributes to stabilizing said structure.

73. (New) A method according to claim 72, wherein,

in step 1), said compartment(s) or casing(s) connected to said structure are filled with sea water or with a first fluid that is lighter than sea water; and

in step 2), said structure is lowered to a depth of 30 m to 60 m corresponding to a pressure of 3 bars to 6 bars, at which depth a buoyancy fluid, as defined in claim 38, consisting of a liquefied gas that is lighter than sea water is injected under pressure into said compartment(s) or casing(s) from a gas tanker ship on the surface, so as to constitute a buoyancy element according to claim 47.

74. (New) A method of recovering polluting effluent that is lighter than sea water, as contained in the tanks of a shipwreck lying on the sea bed, in which method:

1) a said receptacle is put into place in accordance with the method of claim 66; and

2) the effluent recovered inside said receptacle is collected by being emptied out through said top emptying orifice.--